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Missing Scalars at the Cosmological Collider

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Light scalar fields typically develop spatially varying backgrounds during inflation. Very often they do not directly affect the density perturbations, but interact with other fields that do leave nontrivial signals in primordial perturbations. In this sense they become "missing scalars" at the cosmological collider. We study potentially observable signals of these missing scalars, focusing on a special example where a missing scalar distorts the usual oscillatory features in the squeezed bispectrum. The distortion is also a useful signal distinguishing the de Sitter background induced thermal mass from a constant intrinsic mass.

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